K083278

APR - 8 2009

SECTION 7

510(k) SUMMARY

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This summary of 510(k) safety and effectiveness information is being submitted in accordance with the requirements of SMDA 1990 and 21 CFR 807.92.

The assigned 510(k) number is K083278.

807.92 (a)(1): Name: AVantage™ A/H5N1 Flu Test

Address: 772 Lucerne Drive
Sunnyvale, CA 94085

Phone: 408-585-3909
FAX: 408-585-3901
Contact: Dr. Linda McAllister

807.92 (a)(2): Device name- trade name and common name, and classification

Trade name: AVantage™A/H5N1 Flu Test

Common Name: Reagents for the qualitative detection of influenza virus subtype H5N1

Classification: CFR §21. 866.3332

807.92 (a)(3): Identification of the legally marketed predicate device

The AVantage™ A/H5N1 Flu Test is substantially equivalent to two previously cleared products, namely the CDC Human Influenza Virus Real-time RT-PCR Detection and Characterization Panel (Centers for Disease Control and Prevention, Atlanta, GA) based on intended use and cleared under K080570, and the QuickVue Influenza A+B Test (Quidel Corporation, San Diego, CA), based on technological characteristics and cleared under K053146.

807.92 (a)(4): Device Description

The AVantage™ A/H5N1 Flu Test is a rapid diagnostic device that detects the presence of the H5N1 subtype from throat swabs or nose swabs collected from patients with flu symptoms, or in viral cultures for the presumptive laboratory identification of influenza H5N1 virus. It is an immunoassay, using a combination of monoclonal antibodies and recombinant proteins containing PDZ domains to capture and detect NS1.

The AVantage™ A/H5N1 Flu Test begins with the extraction of the influenza A H5N1 NS1 viral antigen. The patient sample is prepared by delivering the swab to the transport medium. Sample is then transferred to the lyophilized Lysis Buffer vial (Reagent A) which contains a lysing agent where cells are lysed, releasing intracellular proteins. Next, the Loading Buffer (Reagent B) is added to condition the sample. The sample is then added to the Detector (Reagent C), which contains lyophilized colloidal gold-conjugated monoclonal anti-influenza A antibodies that recognize a broad range of influenza A subtypes and strains. After re-suspension of the antibodies, the solution is added to the sample well of the AVantage™ A/H5N1 Flu Test cassette, where NS1 in the specimen will react with reagents on the membrane of the cassette. The results are read visually by observing the presence or absence of lines on the membrane at the indicated locations.

807.92 (a)(5): Intended Use

The AVantage™ A/H5N1 Flu Test is intended for the *in vitro* qualitative detection of influenza A/H5N1 virus directly from symptomatic patient nasal or throat swab specimens or in viral cultures for the presumptive laboratory identification of influenza A/H5N1 virus.

Results from testing with the AVantage™ A/H5N1 Flu Test should be used in conjunction with other laboratory testing and clinical and epidemiological risk factors for the presumptive identification of patients infected with Influenza H5N1 virus. AVantage™ A/H5N1 Flu Test is intended as a Prescription Use device.

Testing should not be performed unless the patient meets the most current U.S. Department of Health and Human Services (DHHS) clinical and epidemiologic criteria for testing suspect A/H5 specimens. The definitive identification of influenza A/H5 either directly from patient specimens or from viral cultures requires additional laboratory testing, along with clinical and epidemiological assessment in consultation with national influenza surveillance experts.

Negative results do not preclude influenza virus infection and should not be used as the sole basis for treatment or other patient management decisions.

807.92 (a)(6): Technological Similarities and Differences to the Predicate

CHARACTERISTIC	Arbor Vita AVantage™ A/H5N1 Flu Test	CDC Human Influenza Virus Real-time RT-PCR Detection and Characterization Pannel (rRT-PCR Flu Panel) K080570	Quidel QuickVue Influenza A+B Test) K053146
Intended Use	The AVantage™ A/H5N1 Flu Test is intended for the *in vitro* qualitative detection of Influenza H5N1 virus directly from symptomatic patient nasal or throat swab specimens or in viral culture for the presumptive laboratory identification of Influenza H5N1 virus. Results from testing with the AVantage™ A/H5N1 Flu Test should be used in conjunction with other laboratory testing and clinical and epidemiological risk factors for the presumptive identification of patients infected with Influenza H5N1 virus. AVantage™ A/H5N1 Flu Test is intended as a Prescription Use device. Testing should not be performed unless the patient meets the most current U.S. Department of Health and Human Services (DHHS) clinical and epidemiologic criteria for testing suspect A/H5 specimens. The definitive identification of influenza A/H5 (Asian lineage) either directly from patient specimens or from viral cultures requires additional laboratory testing, along with clinical and epidemiological assessment in consultation with national influenza surveillance experts. Negative results do not preclude	The test is intended for use in real-time RT-PCR assays on an ABI 7500 Fast Dx Real-Time PCR instrument in conjunction with clinical and epidemiological information: 1) for qualitative detection of influenza virus type A or B in symptomatic patients from viral RNA in nasopharyngeal and/or nasal swab specimens, 2) for determination of the subtype of seasonal human influenza A virus, as seasonal A/H1 or A/H3, if present, from viral RNA in nasopharyngeal and/or nasal swab specimens, 3) for presumptive identification of virus in patients who may be infected with influenza A/H5 (Asian lineage) from viral RNA in human respiratory specimens and viral culture in conjunction with clinical and epidemiological risk factors 4) to provide epidemiologic information for surveillance for influenza viruses. The definitive identification of influenza A/H5 (Asian lineage) either directly from patient specimens or from virus cultures requires additional laboratory testing, along with clinical and epidemiological assessment in consultation with national influenza surveillance experts. Negative results do not preclude influenza virus infection and should not be used as the sole basis for treatment or other management decisions. All users, analysts and any person reporting diagnostic results from this device should be	Rapid qualitative detection of influenza type A and type B antigens directly from nasal swab, nasal wash and/or nasal aspirate specimens. Intended for uses as an aid in the rapid diagnosis of acute influenza virus infections. Negative results should be confirmed by culture.

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	influenza virus infection and should not be used as the sole basis for treatment or other patient management decisions.	trained to perform and interpret the results from this procedure by a CDC instructor or designee prior to use.	
Indications for Use/Limitations	For prescription use only The AVantage™ A/H5N1 Flu Test is indicated for use only in high complexity laboratories.	(Same as Intended Use) Special instrument required is the ABI 7500 Fast Dx Real-Time PCR instrument. The special condition for use is for prescription use only.	For In Vitro diagnostic use
Sample	Throat or nasal swab, or virus culture.	Nasopharyngeal or nasal swab respiratory specimens, or virus culture	Nasal swab, nasal wash and/or nasal aspirate
Sample Preparation	M4 viral transport media and swabs supplied by REMEL should be used for sample collection. Swabs are applied to the throat or nose, and rotation and slight pressure are applied to collect specimen. The specimen in the swab is then placed in 3 mL M4 Viral Transport Media (REMEL).	Using reagents and specific lots recommended by CDC, RNA is extracted and purified from the cellular specimen matrix. cDNA is produced from RNA with RT-PCR reaction. Fluorescently labeled probes anneal to amplified DNA fragments and the fluorescent signal is monitored by the ABI 7500 Fast Dx instrument during each PCR cycle. Amplification of target is recorded as increase of fluorescence over time in comparison of a background signal.	Nasal swabs are applied to nostril with most secretion, and pressed against the nasal wall with rotation. The material from the swab is then extracted with reagents supplied in the kit. Nasal aspirates/wash are collected by instilling with a syringe 2.5 ml sterile normal saline into one nostril of the patient. Collect fluid into a dry specimen container. Swabs are supplied in the kit.
Methodology	Two step test (gold-mAb detector dried in a tube). Test is based on immunochromatographic principles.	RNA is extracted and purified from the cellular specimen matrix. Using reverse transcription, cDNA is made from the RNA. The cDNA is amplified, and an increasing fluorescent signal is produced through each PCR cycle by fluorescently labeled probes that anneal to amplified DNA fragments. The fluorescence intensity is monitored by the ABI 7500 Fast Dx instrument during each cycle.	One step test (latex-mAb detector dried in a pad within a dipstick). Test is based on immunochromatographic principles.
Quality Control	Each kit contains a positive control (external quality control) that must be successfully run before using the kit. Testing with the negative control (M4 Viral Transport Media (not included in the kit) must also be performed before using the kit. When running the test, the appearance of a red Control Line in each test indicates proper function of	The kit contains several controls: The Internal positive control, the human RNASE P (RP) primer and probe set detects human RP and ensures that adequate isolation of nucleic acid resulted from extraction from the specimen as well as overall instrument performance. The Human Specimen Control (HSC) is a	Each kit contains external positive and negative control swabs supplied in the kit. Controls should be tested with each new lot or shipment of materials. The test also contains built-in procedural control features. The appearance of a blue procedural Control Line provides three forms of positive internal control by demonstrating:, 2) capillary flow occurred, 3) functional integrity of the Test Strip was

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	the buffer reagents, capillary flow, and functional integrity. If the control line does not appear, the test is considered Invalid.	noninfectious cultured human cell material that demonstrates successful recovery of RNA as well as extraction reagent integrity. The Seasonal Influenza Virus Control (SIVC) consists of three different influenza viruses representing A/H1, A/H3 and Influenza B viruses and cultured human cells. The SIVC control demonstrates that the master mix and primer probe sets are functioning properly. The influenza Virus A/H5N1 Positive Control (H5VC) is a genetically modified reassortant human influenza virus (BSL2 category) and cultured human cells. This control demonstrates that the master mix and primer and probe sets for Influenza A, Influenza A/H5 (H5a, H5b), and RP are functioning properly.	maintained. If the Control Line does not show up, the test is considered invalid.
Detection Method	Visual	Real Time Fluorescence which is monitored by fluorimeter	Visual
Testing Environment	Professional use	CDC Influenza Division will limit the distribution of this device to only those users who have successfully completed training provided by CDC instructors or designees.	Professional use
Limit of Detection/Sensitivity	Detection levels were: 36 $TCID_{50}$/ml for H5N1 isolate 2006914724 (Influenza A virus) (A/Egypt/14724-NAMRU3/2006(H5N1) (CDC Genbank # 200512) 134 $TCID_{50}$/ml for H5N1 isolate 2008903158 (Influenza A virus) (A/Egypt/3158-NAMRU3/2008(H5N1) (CDC Genbank # FJ226060) In addition to the two samples described above, an additional 22 H5N1-positive	Limit of Detection levels were reported for influenza A/H1N1, A/H3N2, A/H5N1 and B. The following are the LoD's reported for A/H5N1: LoD of $10^{1.0}$ EID_{50}/ml for A/Vietnam/1203/2004xA/Puerto Rico/8/34 reassortant. LoD of $10^{1.0}$ EID_{50}/ml for A/Anhui/01/2005xA/Puerto Rico/8/34 reassortant With respect to clinical sensitivity, five retrospective H5N1-Positive clinical specimens were tested, with 100% Percent	Detection levels range from $6.6x10^{-1}$ pfu/ml to $1.6x10^{7}$ pfu/ml for influenza A viruses

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	cultured specimens (total of 24) were tested, with 100 % positive agreement with viral culture. All samples were of Clade 2.2	Positive Agreement with viral culture (56.6%-100%) 95% CI. A total of 19 H5N1-positive cultured specimens were also tested, with 100 % positive agreement (83.2-100%) 95 % CI with viral culture. Samples tested were from Clades 2.2.1, 2.2, and 2.3.	
Cross-Reactivity	The AVantage™ A/H5N1 Flu Test did not cross-react with 21 bacterial isolates and 28 viral isolates (including seasonal influenza A and B). Bacterial isolates were evaluated at a concentration of $1.5x10^8$ cfu/ml. Viral isolates were evaluated at a concentration of at least $8.89x10^3$ $TCID_{50}$/ml	The H5N1 component of the rRT-PCR Flu Panel test did not cross-react with ten (10) influenza virus strains of A/H1N1, A/H3N2 and Influenza B at low virus concentrations at 10^2 $TCID_{50}$/ml. The rRT-PCR Flu Panel test did not cross-react with nucleic acids extracted from 27 organisms (9 non-influenza A/B viruses, 17 bacteria, and 1 yeast) representing common respiratory pathogens or flora commonly present in specimens from the nasopharynx region. Bacteria and yeast were tested at concentrations greater than or equal to 10^6 cfu/ml. Non-influenza respiratory viruses were tested at concentrations greater than 10^6 $TCID_{50}$/ml with the exception of human parainfluenza type 2 which was tested at $10^{3.1}$ $TCID_{50}$/ml and Human Corona viruses OC43 (50.4 ng/ul of total RNA from culture) and 299E (31.6 ng/ul total RNA from culture).	The QuickVue Influenza Test was evaluated with a total of 62 bacterial and viral isolates. Bacterial isolates were evaluated at a concentration between 10^7 and 10^9 org/ml. Viral isolates were evaluated at a concentration of at least 10^4-10^8 $TCID_{50}$/ml. None of the organisms tested gave a positive result in the QuickVue Influenza Test.
Clinical Specificity	100% negative agreement with 440 throat and 447 nasal swab samples (95% CI::99.1% - 100%)	A total of 415 prospective seasonal specimens collected for routine influenza testing from nasal and nasopharyngeal swabs were used in this study. The H5N1 component of the rRT-PCR Flu Panel test had 100 % Percent Negative Agreement with viral culture (99.1%-100%) 95 % CI.	Nasal Swabs: 96 % [95% C.I. 91%-98%] 160/167 Nasal Wash or Aspirates: 99 % [95 % C.I. 91%-100%] 68/69
Interference	Whole blood, Mucin and 12 over-the-counter (OTC) products were tested and		Whole blood, Mucin and 19 over-the-counter (OTC) products were tested in excess of

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	did not interfere with the AVC Avian Flu Test.		physiological levels and did not interfere with the QuickVue Influenza Test.
Reproducibility	Testing of AVantage™ A/H5N1 Flu Test was conducted at three sites using a panel of coded specimens containing recombinant H5N1 NS1 protein. Two operators at each site performed three replicates/sample, for a total of 24 tests per day for five days. Panel contained negative, high negative, moderate positive and high positive specimens. The fifth day contained an extra challenge sample for an additional 6 measurements. No significant differences were observed between runs (5 days), between operators (2 operators) or between sites (3 sites).	Reproducibility and precision studies were done at 3 sites, using a panel of 9 simulated samples (two viral concentrations: low viral RNA titer range concentration and 1:10 dilution of the previous sample) for influenza A/H1N1, A/H3N2, A/H5N1 (reassortant) and B. The panels and assay controls were tested at each site by two operators on five (5) different days within a 10-day period. The "low viral RNA titer" concentration was generally one log above the assay cutoff for all analytes, whereas the 1:10 dilution of the same sample approximated a sample at the assay cutoff. Each participating clinical site tested one of four RNA purification methods to evaluate reproducibility of the CDC rRT-PCR Flu Panel on the validated ABI 7500 Fast Dx Real-Time PCR instruments. For H5N1 studies, the total agreement with expected results was as follows: H5a (low viral titer): 40/40 (95 % CI: 91.2-100 % H5b (low viral titer): 39/40 (95 % CI: 86.8-99.9 %) H5a (1/10 of low viral titer): 31/40 (95 % CI: 61.6-89.2) H5b (1/10 of low viral titer): 27/40 (95 % CI: 50.9-81.4 %)	Evaluation of QuickVue Influenza Test was conducted at three Physicians Offices using a panel of coded specimens. Personnel with diverse backgrounds performed the test. Panel contained neg., low positive and moderate positive specimens. Each specimen level was tested in each site in replicates of at least six over a period of three days. The results at each site agreed 99 % with the expected results. No significant differences were observed within run (6 replicates), between runs (3 different days), or between the three sites.

807.92 (b)(1) and 807.92 (b)(2):

Brief Description of Nonclinical and Clinical Data

The precision/repeatability of the AVantage™ A/H5N1 Flu Test was demonstrated by conducting within-laboratory tests at a range of recombinant H5N1 NS1 protein analyte concentrations over twelve consecutive days. Performance of the assay was consistent, with the high negative sample yielding 8% positive results while the low positive and moderate positive samples yielding respectively 96% and 100% positive results.

The reproducibility of the AVantage™ A/H5N1 Flu Test was determined by measuring the consistency of assay performance using negative control, and high negative, moderate positive, and high positive recombinant protein H5N1 NS1 samples over five days at three sites with two operators at each site. The results showed reproducible performance across days, sites and operators.

Due to the rare occurrence of H5N1 infection and the absence of infection in the United States, sensitivity studies of the AVantage™ A/H5N1 Flu Test were performed using H5N1 isolates from infected individuals, collected in the course of WHO/NAMRU-3 pandemic surveillance and response activities. All isolates studied herein were classified as Clade 2.2 and are part of the CDC global H5N1 repository.

The 24 human-derived H5N1 viral culture specimens were grown in MDCK cells or eggs. Included in the study were three H5N1 negative samples. Study personnel were blinded to the true H5N1 status. The reference method used to verify H5N1-positive status of the viral culture samples was HAI. Eleven of these specimens were from first passage cultures, and 13 of the specimens were from second passage cultures. The study was conducted in BSL-3 labs at NAMRU-3 by NAMRU-3 personnel. The AVantage™ A/H5N1 Flu Test used in this study was performed according to the AVC Test Instructions for Use.

AVantage™ A/H5N1 Flu Test results showed 100% positive agreement for all 24 H5N1-positive samples. The three H5N1-negative specimens reported as H5N1-negative in the AVantage™ A/H5N1 Flu Test.

Performance Summary – AVantage™ A/H5N1 testing with viral culture samples

NAMRU-3 Comparison Results	Virus Culture (Gold Standard) Results		Performance
	H5N1 (+)	H5N1 (-)	
AVantage™ A/H5N1 Flu Test Positive	24	0	100% Positive Agreement* 95% CI = (86.2%, 100%)
AVantage™ A/H5N1 Flu Test Negative	0	3	100% Negative Agreement 95% CI = (43.8%, 100%)
Total	24	3	

Twenty four H5N1+ viral culture specimens; eleven were from first passage cultures, and thirteen were from second passage cultures. Sample status was confirmed by HAI.

The specificity of the AVantage™ A/H5N1Flu Test was assessed in a prospective clinical study during the 2007-2008 flu season. Symptomatic subjects were recruited from four clinics at three sites into a broader surveillance study conducted by the Naval Health Research Center (NHRC). A portion of subjects (464) was recruited into the AVC study. Of these 464 symptomatic subjects, 110 had influenza infection (73, Influenza A and 37 Influenza B). AVC testing was performed in two laboratories and yielded no false positive results.

Performance Summary - AVantage™ A/H5N1 testing prospective clinical samples

NHRC Comparison Results	Virus Culture (Gold Standard) Results				Performance
	H5N1 (+)	Influenza A (+) H5N1 (-)	Influenza B (+) H5N1 (-)	Influenza A&B (-) H5N1 (-)	
AVantage™ A/H5N1 Flu Test Positive	0	0	0	0	N/A*
AVantage™ A/H5N1 Flu Test Negative	0	113	55	727	100% Specificity 95%CI = (99.57%; 100%)
Total	0	113	55	727	

Sample status was confirmed by IFA and haemagglutination-inhibition test (HAI).

** No true positive samples were identified by Gold Standard methods.*

*** 8 samples were not subtyped by IFA or HAI, but were determined to be H3 by Lightcycler RT-PCR using primers developed by the Air Force Institute of Operational Health.*

The AVantage™ A/H5N1 Flu Test was evaluated for potential cross-reactivity with a total of 49 bacterial and viral isolates. The bacterial isolates were tested at concentrations of approximately $1.5x10^8$ cfu/mL. The viral isolates were used at concentrations of $10^4 - 10^9$ $TCID_{50}$/mL, or $10^2 - 10^4$ $CEID_{50}$/mL.

None of the pathogens tested showed cross-reactivity with the assay.

Bacterial Panel:

Bacteroides fragilis
Bordetella pertussis
Corynebacterium xerosis
Escherichia coli
Haemophilus influenzae
Lactobacillus casei
Legionella pneumonphila
Moraxella catarrhalis
Mycoplasma pneumoniae
Neisseria meningitidis
Neisseria mucosa
Peptostreptococcus anaerobius
Porphyromonas asaccharolyticus

Pseudomonas aeruginosa
Staphylococcus aureus
Staphylococcus epidermidis
Streptococcus pneumoniae
Streptococcus pyogenes Group.A
Streptococcus salivarius
Streptococcus sp. Group B
Streptococcus sp. Group C

Viral Panel
Adenovirus, Type 2
Adenovirus Type 3
Adenovirus Type 7
Adenovirus Type 14
Coronavirus OC 43
Coronavirus 299E
Coxsackievirus Type A9
Coxsackievirus Type B5
Cytomegalovirus
Echovirus Type 2
Echovirus Type 3
Echovirus Type 6
Enterovirus
Herpes simplex virus Type 1
Measles virus
Mumps virus
Parainfluenza virus Type 1
Parainfluenza virus Type 2
Parainfluenza virus Type 3
Rhinovirus Type 1A
Respiratory Syncytial virus Type A
Respiratory Syncytial virus Type B
A2/Wisconsin/67/2005 (H3N2-like)
A/Hiroshima/52/2005 (H3N2-like)
A/Port Chalmers/1/73 (H3N2)
A/PR8/34 (H1N1)
A1/Denver/1/57
B/Hong Kong/5/72

Substances commonly encountered in nasal and throat specimens were tested for their potential inhibitory effect on the performance of the AVantage™ A/H5N1 Flu Test. Listed below are the substances and concentrations at which they were tested. None of the substances tested had an inhibitory effect on assay performance.

Whole blood (2%)
Mucin (500 µg/ml)

Mouthwash (Scope®) (25%)
Dextromethoraphan (Robitussin®) (5 mg/ml)
Acetaminophen (Tyelenol®) (10 mg/ml)
Throat losange (Cepacol® - cetypyridium chloride, benzocaine and menthol) (25%)
Oxymetazoline (Afrin®) (10%)
Erythromcyin (20 µg/ml)
Nasal corticosteroids (triamcinolone) (25 mg/ml)
Zanamivir (Relenza®) (1 mg/ml)
Phenyephrine (Neosynephrine®) (100 mg/ml)
Diphenhydramine (Benadryl®) (1 mg/ml)
Luffa operculata, Galphimia glauca, Histaminum hydrochloricum and sulfur (Zicam®) (1%)
Rimantadine (250 ng/ml)

807.92 (b)(3): Conclusions from Nonclinical and Clinical Testing

Nonclinical and clinical testing was performed for the AVantage™ A/H5N1 Flu Test. The test system was shown to be safe and effective for its intended use.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
2098 Gaither Road
Rockville MD 20850

Linda McAllister, MD, PhD
Executive Vice President of Diagnostics
Chief Medical Officer
Regulatory Affairs
Arbor Vita Corporation
772 Lucerne Drive
Sunnyvale, CA 94087

APR - 8 2009

Re: K083278
Trade/Device Name: AVantage™A/H5N1 Flu Test
Regulation Number: 21 CFR 866.3332
Regulation Name: Reagent for detection of specific novel influenza A viruses
Regulatory Class: Class II
Product Code: OMS
Dated: April 7, 2009
Received: April 7, 2009

Dear Dr. McAllister:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to such additional controls. Existing major regulations affecting your device can be found in Title 21, Code of Federal Regulations (CFR), Parts 800 to 895. In addition, FDA may publish further announcements concerning your device in the Federal Register.

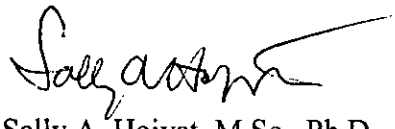
Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Parts 801 and 809); and good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820).

This letter will allow you to begin marketing your device as described in your Section 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific information about the application of labeling requirements to your device, or questions on the promotion and advertising of your device, please contact the Office of In Vitro Diagnostic Device Evaluation and Safety at (301) 594-3084. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). Other general information on your responsibilities under the Act may be obtained from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address http://www.fda.gov/cdrh/dsma/dsmamain.html.

Your device is classified (see above) into class II (Special Controls) and is subject to additional controls as outlined in the **Class II Special Controls Guidance Document: Reagents for Detection of Specific Novel Influenza A Viruses** including the post market measures described in Section 8 "Postmarket Measures".

Sincerely yours,



Sally A. Hojvat, M.Sc., Ph.D.
Director
Division of Microbiology Devices
Office of *In Vitro* Diagnostic Device
Evaluation and Safety
Center for Devices and
Radiological Health

Enclosure

Indication for Use

510(k) Number (if known): K083278

Device Name: AVantage™ A/H5N1 Flu Test

Indication For Use:

The AVantage™ A/H5N1 Flu Test is intended for the *in vitro* qualitative detection of influenza A/H5N1 virus directly from symptomatic patient nasal or throat swab specimens or in viral cultures for the presumptive laboratory identification of influenza A/H5N1 virus.

Results from testing with the AVantage™ A/H5N1 Flu Test should be used in conjunction with other laboratory testing and clinical and epidemiological risk factors for the presumptive identification of patients infected with Influenza H5N1 virus. AVantage™ A/H5N1 Flu Test is intended as a Prescription Use device.

Testing should not be performed unless the patient meets the most current U.S. Department of Health and Human Services (DHHS) clinical and epidemiologic criteria for testing suspect A/H5 specimens. The definitive identification of influenza A/H5 either directly from patient specimens or from viral cultures requires additional laboratory testing, along with clinical and epidemiological assessment in consultation with national influenza surveillance experts.

Negative results do not preclude influenza virus infection and should not be used as the sole basis for treatment or other patient management decisions.

Prescription Use __X____ And/Or Over the Counter Use ____.
(21 CFR Part 801 Subpart D) (21 CFR Part 801 Subpart C)

(PLEASE DO NOT WRITE BELOW THIS LINE; CONTINUE ON ANOTHER PAGE IF NEEDED)

Concurrence of CDRH, Office of In Vitro Diagnostic Device Evaluation and Safety (OIVD)

Division Sign-Off
Office of In Vitro Diagnostic Device
Evaluation and Safety

510(k) K083278